

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

Solid and Hazardous Waste Bureau

Solid Waste Program

MARC RACICOT, GOVERNOR 406/444-1430

FAX # (406) 444-1499



STATE OF MONTANA

OFFICE 836 Front Street
LOCATION Helena, Montana

MAILING PO BOX 200901
ADDRESS: Helena, MT 59620-0901

February 4, 1994

Marvin Mintyala
Mister M Disposal
HCR 85, Box 4066
Lewistown, Montana 59457

RE: **MISTER M DISPOSAL CLASS II, FERGUS COUNTY - LICENSE NO. 302**
NOTICE OF VIOLATION - HYDROGEOLOGIC RESPONSE TO COMMENTS
CONCERNING THE "GEOHYDROLOGIC CHARACTERIZATION".

Dear Mr. Mintyala:

This letter is to notify you and the contracted technical consultant, Mr. Robert W. Gillespie, P.E., with Abenaki Geoenvironmental, Inc. that the 45-calendar day period for your response to Department comments concerning the required [see the Administrative Rules of Montana (ARM) 16.14.703(1)] "Geohydrologic Characterization" for the Mister M Disposal site expired on January 24, 1994. The hydrogeologic information which was requested in a letter to Mr. Gillespie (and copied to you) dated December 9, 1993 is critical to the approval or disapproval of the presently installed ground water monitoring wells. The responses to the Department's comments, questions, and concerns are also a vital part of the completion of the required Hydrogeologic and Soils Study/Report.

Mister M Disposal has come so far with the hydrogeologic investigation and study/report, it would be extremely unfortunate if it is not finalized so that the Department can approve a ground water monitoring system that is appropriate for the site, and which adequately monitors and protects human health and the environment. If Mr. Gillespie needed a short extension to the required 45-day response period, he should have requested it on, or prior to the January 24, 1994 deadline.

On January 27, 1994 I contacted you over the telephone to make sure that you were aware of this possible violation. I appreciated your follow-up return call on January 28, 1994, however it appears to have been of no avail, as the Department still is uncertain as to the status of the requested hydrogeologic responses.

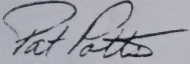
Mister M Disposal Class II Landfill

Page 2

February 4, 1994

If you have any questions, please give me a call.

Sincerely,



Pat Potts

Environmental Specialist

cc: Robert W. Gillespie, P.E., R.W. Gillespie & Associates, P.O. Box 1730, Sanford, Maine
04073

Roger Godfrey, R.S., Central Montana Health District, 404 4th Ave. South, Lewistown,
MT 59457

Fergus County Commissioners, 712 W. Main, Lewistown, MT 59457

City of Lewistown, 305 Watson Street, Lewistown, MT 59457

Dayna Shepherd, Solid Waste Attorney

path: sw\fergusmr.vio

file: fergus co./mister m disposal/grd wtr (corr)

ROUTE SLIP

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

TO: Root / YW

DATE: 9/27/94

1. Jon D. JD

2. Roger T res

3. _____

☒ Approval

☐ Comment

☐ Necessary Action

☐ Note and Return

☐ Note and File

☐ Investigate

☐ Prepare reply

☐ Signature

☐ See Me

☐ As requested

☐ For your information

☐ Per Conversation

REMARKS:

sw/fergusmr. rew

FROM: 3

Mailed 9-30-94
YW



DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

Waste Management Division
Solid Waste Program
406/444-1430

FAX # (406) 444-1499



STATE OF MONTANA

OFFICE 2209 PHOENIX AVE.
LOCATION: HELENA, MONTANA

MAILING PO BOX 200901
ADDRESS: HELENA, MT 59620-0901

September 29, 1994

Marvin Mintyala
Mister M Disposal
HCR 85, Box 4066
Lewistown, Montana 59457

RE: **MISTER M DISPOSAL, FERGUS COUNTY - LICENSE NO. 302**
1) WATER LEVEL MEASUREMENTS/OBSERVATIONS IN ALL EXISTING
MONITORING WELLS,
2) SAMPLING OF DOMESTIC WELLS, AND
3) COMMENTS ON THE REVISED GEOHYDROLOGIC CHARACTERIZATION OF
MISTER M LANDFILL

Dear Mr. Mintyala:

The Revised Geohydrologic Characterization of the Mister M Landfill received by the Department on April 20, 1994, which is required according to the Administrative Rules of Montana (ARM) 16.14.703, has attempted to address the reportedly unsaturated zone above the local drinking water aquifer. This revised characterization should have been inclusive of records of monthly monitoring to observe if ground water recharge has occurred over time and/or on a seasonal basis, and if so, to measure the water levels in any of the monitoring wells installed in June 1993. ARM 16.14.706(4)(a) requires monthly water level measurements be recorded for a year at facilities where ground water is obviously present. Some type of monitoring/observation of these monitoring wells should have been provided, even on a limited basis, at this site.

WATER LEVEL MEASUREMENTS/OBSERVATIONS IN ALL EXISTING MONITORING WELLS

Please provide the Department with any water level/observation data that has been recorded at this site since the wells were installed in June 1993. If this has not been done on any regular basis, it is imperative to begin doing so as soon as possible and report these results to the Department. Any determination to be made by the

Department concerning possible no migration approval for this site is highly dependent on this data.

If water is found in these wells, it should be sampled and analyzed according to the ARM 16.14.706 Table 1 list of required parameters/constituents. If insufficient volumes of water preclude sampling for the entire list of constituents, samples for volatile organic compound (VOC) analysis should be collected first (i.e., two 40-ml vials). Because of the apparently slow, to no recharge rate in these shallow zones, purging these wells would undoubtedly be impractical.

SAMPLING OF DOMESTIC WELLS

It has also come to the Department's attention that by ignoring the characterization and testing of the drinking water aquifer at approximately 120 to 350 feet below ground surface (BGS) in this area, the Department is not being as protective of human health and the environment as is the intent of the Administrative Rules of Montana (ARM), Title 16, Chapter 14, Subchapter 7, and Section 75-10-207 of the Montana Code Annotated (MCA).

Therefore, another integral part of this study should involve the quality of the drinking water aquifer in the domestic wells proximal to the landfill disposal areas. Merely identifying these domestic receptors without sampling the existing quality of the drinking water would be remiss. Micro and macro fractures may exist in the unsaturated zone offering possible conduits for contamination to enter the ground water. The possibility of perched ground water undetected during field investigations at the site for the hydrogeologic and soils study is also a concern of the Department's.

To help insure that possible leachate contaminants from the landfill have not affected the natural quality of the drinking water aquifer in this area, the Department will require that the quality of the domestic wells in the immediate vicinity of the landfill be sampled according to the list of parameters/constituents required in Table 1, of ARM 16.14.706.

It is also important to measure the depth to water in as many of the domestic wells sampled as possible, using extreme care not to introduce any contaminants into the wells. From contouring the water level information provided on Figure 6 "Existing Water Well Locations and Ground Water Depths" of the Geohydrologic Characterization of the Mister M Landfill, the direction of ground water flow appears to be to the southeast (see enclosure). Therefore, from the interpretation of this historic potentiometric data, house wells "A" and "G" would represent the more hydraulically

Department concerning possible no migration approval for this site
is highly dependent on this data

It would be found in these wells. It would be sampled and analyzed
according to the M.H.B. 1947 Table 1 list of required
parameters. It is difficult to estimate of water provided
existing for the entire list of parameters. Samples for volatile
organic compounds (VOC) analysis should be collected from 1 to 2
feet below the water table. Because of the extremely low, no recovery rate
is shown. Samples should be collected from these wells and analyzed by
laboratory.

ANALYSIS OF DOMESTIC WELLS

It has been noted by the Department's attention that by sampling the
drinking water and testing of the drinking water supply at
approximately 150 to 200 feet below ground surface (BGS) in this
area, the Department is not being an advocate of human health and
the environment as in the case of the Administrator's Order
1954 (M.H.B. 1947) Table 1, Chapter 1, and Section 15
1957 of the Montana Code Annotated (MCA).

Therefore, another integral part of this study should involve the
quality of the drinking water supply in the domestic wells proximal
to the landfills disposal areas. Merely identifying these domestic
wells without knowing the existing quality of the drinking
water would be useless. Micro and major elements may exist in the
water and some other possible sources for contamination to
enter the ground water. The possibility of polluted ground water
undetected during field investigations of the site for the
hydrogeologic and water study is also a concern of the Department's.

To this issue the possible possible contaminants from the landfills
have not affected the natural quality of the drinking water supply
in this area, the Department will require that the quality of the
domestic wells in the immediate vicinity of the landfills be sampled
according to the list of parameters/analyses required in Table 1
of M.H.B. 1947.

It is also important to measure the depth to water in as many of the
domestic wells as possible, using extreme care not to
introduce any contaminants into the wells. Data concerning the
water level information provided on Figure 5 "Water Level Well
Locations and Ground Water Section" of the Hydrogeologic
Investigation of the Miller H. Bishop, the location of ground
water flow appears to be in the southeast (see enclosure).
Therefore, from the investigation of this hydrogeologic
data, domestic wells "A" and "C" would represent the more hydrologically

down gradient portion of the landfill, with the Office Well in the midst of the disposal area. The Department also feels strongly that the water quality in wells "H", "C", and "B" be sampled as well, since the direction of ground water flow in the deep aquifer may not be completely clear.

Water quality analytical data from these domestic wells would also provide a basis for analysis of common ions (may be helpful to expand the Table 1 required parameter list) in the ground water associated with this aquifer over a limited localized area. From this chemical data, it might be possible to determine the recharge area, and/or the more hydraulically upgradient portion of the landfill facility.

At present, this domestic well sampling event will be required by the Department as a one-time sampling event for the protection of the drinking water aquifer. In the future, it may be beneficial to re-sample these, or several of these designated wells to re-confirm that there has been no leakage/migration of leachate contaminants from the landfill through the confining layer into the drinking water aquifer.

COMMENTS ON THE REVISED GEOHYDROLOGIC CHARACTERIZATION OF MISTER M LANDFILL

Boring log and monitoring well completion information were compared to the information presented on cross sections A-A', B-B' and C-C' in the revised hydrogeologic report. The Department found major discrepancies in the boring log lithologies, compared to those depicted on the cross sections, for the same borings/wells. Please refer to attached copies of portions of these cross sections where boring log data has been accurately incorporated onto the cross sections.

One of the primary concerns is the ^{possibility} that much of the waste at this facility has been deposited over a traceable sandstone zone (described on the boring logs), which extends down dip, but has not been screened (or drilled deep enough) in the down gradient monitoring wells to determine if these sandstones layers could be possible conduits for contaminant migration for any leachate generated by the landfill.

Therefore, the Department will require that the following monitoring well locations be drilled deeper to determine the nature and extent of the sandstone layers, as they appear to be in direct contact with the waste: MW-1, MW-3, MW-4, MW-2 and MW-7.

down gradient portion of the landfill, when the Office Well in the
center of the disposal area. The Department also feels strongly that
the water quality in wells "B", "C", and "D" be sampled as well.
Since the direction of ground water flow in the deep aquifer may not
be completely clear.

Water quality analytical data from these domestic wells would also
provide a basis for analysis of common ions (may be helpful to
expand the Table 1 reported parameter list) in the ground water
associated with this aquifer over a limited localized area. From
this chemical data, it might be possible to determine the recharge
area, and/or the more hydraulically upgradient portion of the
landfill facility.

At present, this domestic well sampling event will be required by
the Department as a one-time sampling event for the protection of
the drinking water aquifer. In the future, it may be beneficial to
re-sample these, or several of these designated wells to re-constitute
that there has been no leakage/migration of landfill constituents
from the landfill through the confining layer into the drinking
water aquifer.

COMMENTS ON THE REVISED GEOTECHNICAL CHARACTERIZATION OF MISTER M LANDFILL

Boring log and monitoring well completion information were compared
to the information presented on cross sections A-A', B-B', and C-C'.
In the revised hydrogeologic report, the Department found major
discrepancies in the boring log lithologies, compared to those
depicted on the cross sections, for the same borings/wells. These
refer to attached copies of portions of these cross sections where
boring log data has been incorrectly incorporated onto the cross
sections.

One of the primary concerns is the possibility that much of the waste
at this facility has been deposited over a fractured sandstone zone
identified on the boring logs, which extends down dip, but has not
been assessed for drilled deep enough in the down gradient
monitoring wells to determine if these sandstone layers could be
possible conduits for contaminant migration for any leachate
generated by the landfill.

Therefore, the Department will require that the following monitoring
well locations be drilled deeper to determine the nature and extent
of the sandstone layers, as they appear to be in direct contact with
the waste: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6 and MW-7.

Mister M Disposal
Page 4
September 29, 1994

These monitoring wells cannot technically be redrilled, but new holes near the existing wells will need to be drilled to at least 40 feet deeper than those originally installed. Taking hind-sight into account, the updip wells should have been installed first in order to extrapolate existing lithologic units into the more down dip locations. Please note the starred lithologic units on the revised cross sections and the need to penetrate the contiguous zones in the down dip wells.

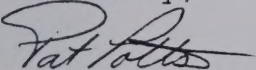
Therefore, be advised that the no migration petition presented to the Department on April 20, 1994 for the Mister M Landfill is, for the present time, denied based on the determination by the Department that the study presented is insufficient to demonstrate no potential for migration of contaminants or leachate at the facility.

The deadline to have an approved closure, and a post closure plan on file with the Department was April 9, 1994. Methane monitoring was required to be initiated on July 1, 1994, and to be monitored on a quarterly basis thereafter. Approved run-on and run-off control systems with an approved stormwater discharge system is also a State requirement. Financial assurance will be required by April 9, 1994. Therefore, the issue of regular ground water monitoring also needs to be resolved as soon as possible, as monitoring at this site was required according to 75-10-207, Montana Code Annotated (MCA) by January 1, 1992.

The Department strongly encourages the Mister M Disposal operation to address the ground water requirements discussed above, before the end of the calendar year, as weather will become more of a problem if these items are allowed to linger. It is in Mister M's best interest to pursue the no migration approval if, in fact, the shallow sandstones can be proven to be unsaturated, through properly placed monitoring wells (i.e., deep enough monitoring wells) and regular observation of the wells to determine if they will recharge with ground water and/or will remain dry.

If you have any questions or comments please give me a call.

Sincerely,



Pat Potts

Environmental Specialist

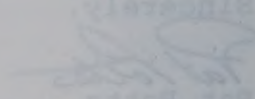
These monitoring wells cannot technically be installed, but new
holes near the existing wells will need to be drilled to at least 40
feet depth than those originally installed. Taking kind-slope into
account, the existing wells have been installed later in order
to extrapolate existing lithologic units into the more down dip
location. Please note the existing lithologic units on the revised
cross sections and the need to penetrate the confining zones in the
down dip wells.

Therefore, be advised that the no migration petition presented to
the Department on April 20, 1994 for the Master W. Landfill is for
the present time, based on the determination by the
Department that the study presented is insufficient to demonstrate
no potential for migration of contaminants or leachate at the
facility.

The decision to have an approved closure, and a post closure plan on
file with the Department was April 2, 1994. Methane monitoring was
required to be initiated on July 1, 1994, and to be monitored on a
quarterly basis thereafter. Approved turn-on and turn-off control
systems with an approved automatic discharge system is also a State
requirement. Financial assurance will be required by April 2, 1994.
Therefore, the issue of regular ground water monitoring also needs
to be resolved as soon as possible, as monitoring at this site was
required according to 15-10-107, Montana Code Annotated (MCA) by
January 1, 1993.

The Department strongly encourages the Master W. Disposal operation
to address the ground water requirements discussed above, before the
end of the calendar year, as weather will become more of a problem
if these items are allowed to linger. It is in Master W's best
interest to pursue the no migration approval. In fact, the
allowance sandboxes can be proven to be unsaturated, through properly
placed monitoring wells (i.e., deep enough monitoring wells) and
regular observation of the wells to determine if they will recharge
with ground water under will remain dry.

If you have any questions or comments please give me a call.

Sincerely,

Pat Foster
Environmental Specialist

Mister M Disposal
Page 5
September 29, 1994

Attachments- map: Aquifer Ground Water Contour Map from
Domestic Well Data.

cross sections: A-A'
B-B'
C-C'

cc: Robert Gillespie, P.E., P.O. Box 1730, Sanford, MA 04073-7730
Fergus County Commissioners, 712 W. Main Street, Lewistown, MT 59457

City of Lewistown, 305 Watson Street, Lewistown, MT 59457
Roger Godfrey, R.S., Central Montana Health District, 404 4th Ave., South,
Lewistown, MT 59457

path: sw\fergusmr.rew
file: Fergus Co./Mister M Disposal/grd wtr (corr)

Attachment - map
Aerial Photograph of Water Control Map from
Domestic Well Data

Cross sections:
A-A'
B-B'
C-C'

Robert Williams, P.E., 404 West 17th, Kansas City, MO 64105-7720
Kansas County Commissioners, 715 W. Main Street, Lawrence, MO 66044
City of Lawrence, 302 Kansas Avenue, Lawrence, MO 66044
Kansas Highway, P.O. Central Kansas Health District, 304 4th Ave., Kansas
Lawrence, MO 66044

Letter to Mr. Williams
Letter to Mr. Williams

Fergus Co.

ROUTE SLIP

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

TO:

Proof ^{PH}

DATE:

2/1/94

1.

Pat C. FRC

2.

Dana S. DOS

3.

Jon D. JP

3.

Roger T. for

- | | | |
|--|---|---|
| ☐ Approval | ☐ Comment | ☐ Necessary Action |
| ☐ Note and Return | ☐ Note and File | ☐ Investigate |
| ☐ Prepare reply | ☐ Signature | ☐ See Me |
| ☐ As requested | ☐ For your information | ☐ Per Conversation |

REMARKS:

sw/fergus m.r. v10

FROM:

p³

mailed
2-4-94
JH



DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

Waste Management Division
Solid Waste Program
406/444-1430

FAX # (406) 444-1499



STATE OF MONTANA

OFFICE 2209 PHOENIX AVE.
LOCATION: HELENA, MONTANA

MAILING PO BOX 200901
ADDRESS: HELENA, MT 59620-0901

October 17, 1994

Marvin Mintyala
Mister M Disposal
HCR 85, Box 4066
Lewistown, Montana 59457

RE: MISTER M DISPOSAL, FERGUS COUNTY - LICENSE NO. 302
MEETING WITH MR. ROBERT W. GILLESPIE, P.E. ON OCTOBER 13, 1994

Dear Mr. Mintyala:

The meeting with Mr. Robert W. Gillespie, P.E. on October 13, 1994, concerning outstanding hydrogeological and ground water issues at the Mister M Disposal site, should have helped to resolve proposed solutions to the data gaps discussed in the Department's letter dated September 29, 1994. Mr. Gillespie's fax to me on October 12, 1994, of a copy of a letter he wrote to you (letter dated October 10, 1990), provided needed information and outlined proposed actions to address specified requirements, such as:

1. Providing a chart (i.e., "Table 1") that summarized a somewhat random, 2 to 3 month schedule from June 1993 to May 1994 of monitoring for the 7 monitoring wells on-site. This table indicated that no free ground water had been observed in any of the 7 wells over the nearly one-year period.
2. Proposing two deeper [approximately 60 feet below ground surface (BGS)] down gradient monitoring wells to determine if saturated zones/shallow ground water-bearing zones are present beneath and adjacent (e.g., at relative projected depths of those associated with the waste disposal area) to the landfill disposal areas.

In our meeting on October 13, 1994, new well identifications were agreed upon as follows:

MW-9 to be located south-southeast of MW-2 & MW-7,
and
MW-10 to be located east of MW-1 & MW-8.

3. Sampling of specified local domestic wells will be required as part of the hydrogeological site characterization [see, Administrative Rules of Montana (ARM) 16.14.703(1)(a)(vii)], as no shallow ground water has been observed at this site to date. Initially, this approach was dismissed because the shallow dry monitoring wells had not been drilled and/or had not been monitored over a sufficient period of time to determine if rate of recharge was going to be a factor in these monitoring wells. Sampling public and domestic wells, as well as springs, is not considered to be equivalent to the uncompromised integrity of a true monitoring well. Therefore, analytical results from such alternate sampling points could be in question.

According to Mr. Gillespie, of the specific domestic wells requested by the Department to be sampled, only the Office Well, well "A", well "H", and well "G" will be accessible for sampling (refer to the "revised November 11, 1993" hydrogeologic report for actual domestic well identification). No water level measurements will be required at those domestic wells that are sealed and cannot be easily measured with a decontaminated water level indicator. The Department would not expect Mr. Gillespie to jeopardize the integrity of any of these supply wells for a water level measurement.

The above information will be presented as an Addendum to the "Revised November 8, 1993" Hydrogeological Study, with two copies required by the Department. The data from this Addendum document will be reviewed following submittal to the Department within two to three weeks of the receipt of the document, assuming no *Force Majeure*.

It is important to stress that only a small portion of the required updated Operations and Maintenance Plan for the Mister M Disposal facility would have needed to be delayed pending the final decision concerning approval or not, of a no migration petition for this site. An approved no migration petition would affect only that portion of the plan involving the design of any new disposal cells and expansion areas within the licensed area. Specifically, all new cells and expansion areas will be required, at a minimum, to have a leachate collection system [see, ARM 16.14.506(6)]; however, if a no migration petition can be approved for this site, it would eliminate the need for a liner [see, ARM 16.14.506(5)].

Of the new regulatory requirements that became effective on October 9, 1993, only the liner design would be a no migration-related issue. Other required documents, plans, schedules (e.g., stormwater runoff, closure, and post-closure plans, etc.) should have been submitted to the Department by the October 9, 1993 regulatory

Sampling of specific local domestic wells will be required as part of the hydrogeological study characterization (see, Hydrogeological Study of Kansas (HMS) 10-10-54(1011)) as no shallow ground water has been observed at this site to date. This study is approved and discussed because the shallow water monitoring wells had not been drilled and/or had not been monitored over a sufficient period of time to determine if rate of recharge was going to be a factor in these monitoring wells. Weighted arithmetic and harmonic wells, as well as springs, is not considered to be equivalent to the unconsolidated integrity of a single monitoring well. Therefore, analytical results from such alternative sampling points could be in question.

According to Mr. Clifton, of the specific domestic wells requested by the Department to be sampled, only the Office Well, Well No. 1, and Well No. 2 will be accessible for sampling water in the "revised November 11, 1954" hydrogeological report for actual domestic well identification. No water level measurements will be required at those domestic wells that are sealed and cannot be easily measured with a barometerized water level indicator. The Department would not expect Mr. Clifton to jeopardize the integrity of any of these supply wells for a water level measurement.

The above information will be presented as an addendum to the "Revised November 11, 1954" hydrogeological study with two copies required by the Department. The data from this addendum document will be reviewed following approval in the Department within two to three weeks of the receipt of the document, assuming no other delays.

It is important to note that only a small portion of the required updated operations and maintenance plan for the Water M Division facility would have needed to be delayed pending the final decision concerning approval or not of a no migration petition for this site. In approved no migration petition would affect only that portion of the plan involving the design of any new disposal cells and expansion areas within the licensed area. Specifically, all new cells and expansion areas will be required, at a minimum, to have a leachate collection system (see, HMS 10-14-54(1011)) however, if a no migration petition can be approved for this site, it would eliminate the need for a liner (see, HMS 10-14-54(1011)).

Of the new regulatory requirements that became effective on October 1, 1971, only the liner design would be a no migration-related issue. Other required documents, plans, schedules (e.g., groundwater runoff, closure, and post-closure plans, etc.) should have been submitted to the Department by the October 1, 1971 regulatory

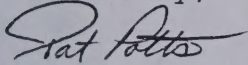
Mister M Disposal
Page 3
October 17, 1994

deadline for those facilities choosing to remain active. Deadlines for methane monitoring [ARM 16.14.521(g)], and load checks [ARM 16.14.521(e)] were extended to April 9, 1994 for landfills the size of the Mister M facility, according to ARM 16.14.501(4). Please submit these documents, plans, etc. to the Department as soon as possible for review and/or approval, as required in the regulations.

The Program would sincerely like to resolve the no migration issue and release Mister M Disposal from general ground water monitoring requirements, if it can be adequately demonstrated that there is, and there will be in the future, no threat to human health and the environment through landfilling activities at this solid waste disposal site. We will carefully consider all information presented which would have bearing on this subject.

If you, or Mr. Gillespie have any questions, please give me a call.

Sincerely,



Pat Potts
Environmental Specialist

cc: Robert W. Gillespie, P.E., P.O. Box 876, Lewistown, Montana
59457

City of Lewistown, 305 Watson Street, Lewistown, MT 59457

Roger Godfrey, R.S., Central Montana Health District, 712 West
Main Street, Lewistown, MT 59457-2562

Dayna Shepherd, Solid Waste Attorney

file: Fergus Co/Mister M/grd wtr

handling for these facilities showing to remain active. Facilities for testing monitoring (ARM 12.14.5117), and load cracks (ARM 12.14.5118) were extended to April 2, 1954 for handling the size of the Miss W facility, according to ARM 12.14.5114. Please submit these documents, plans, etc. to the Department as soon as possible for review and/or approval, as required in the regulations.

The Program would necessarily like to resolve the no migration issue and release Miss W Disposal from general ground water monitoring requirements, if it can be adequately demonstrated that there is and there will be in the future, no threat to human health and the environment through handling activities at this solid waste disposal site. We will carefully consider all information presented which would have bearing on this subject.

If you, or Mr. Gillespie have any questions, please give us a call.

Sincerely,



Pat Feltz
Environmental Specialist

cc: Robert W. Gillespie, P.E., P.O. Box 278, Lewistown, Montana 59457

City of Lewistown, 307 Madison Street, Lewistown, MT 59457

Robert G. Bailey, P.E., Central Montana Health District, 713 West Main Street, Lewistown, MT 59457-2552

David Shepherd, Solid Waste Attorney

File: P-30000-10/10/52 WJW

ROUTE SLIP

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

TO:

Proof cu

DATE:

10/14/94

1.

Pat C PPL

2.

Jim W JW

3.

Roger T pc



Approval



Comment



Necessary Action



Note and Return



Note and File



Investigate



Prepare reply



Signature



See Me



As requested



For your information



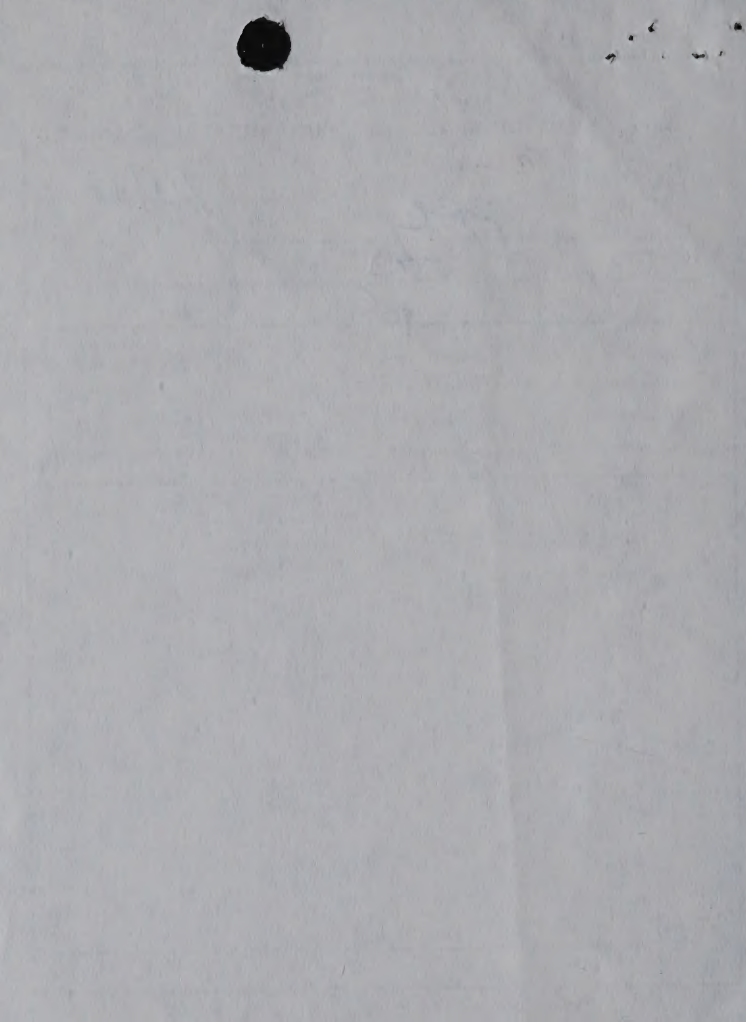
Per Conversation

REMARKS:

FROM:

p3

Sent 10-18-94



IMPORTANT MESSAGE

TO Pat Crowley

DATE 2-8-94

TIME 11:05

A.M.
P.M.

WHILE YOU WERE OUT

M Rob Gillespie

OF

Area Code

& Exchange

(207) 324-8008

TELEPHONED	☒	PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
	RETURNED YOUR CALL		

Message

Mr. M Landfill

Please call him tomorrow morning

Did not get

Doc & letter.

Fax

207(324)8042

Operator

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Tubbs

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MESSAGE CONFIRMATION

SESSION NO. = 509

02/09/94 14:18

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For by F.P. Wally
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DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

Solid and Hazardous Waste Bureau

Solid Waste Program

MARC RACICOT, GOVERNOR 406/444-1430

FAX # (406) 444-1499



STATE OF MONTANA

OFFICE LOCATION 836 Front Street
Helena, Montana

MAILING ADDRESS: PO BOX 200901
Helena, MT 59620-0901

December 9, 1993

FAX		DATE	# PGS
TO	<i>R. Gillespie</i>		<i>3</i>
CO.		FAX#	<i>(207)324-8042</i>
FROM	<i>Pat Crowley</i>		AVERY FX-10

Robert W. Gillespie, P.E.
R.W. Gillespie & Associates
P.O. Box 1730
Sanford, Maine 04073

RE: **MISTER M DISPOSAL, CLASS II, FERGUS COUNTY - LICENSE NO. 302**
REVIEW OF THE "GEOHYDROLOGIC CHARACTERIZATION"

Dear Mr. Gillespie:

On November 15, 1993, the Montana Department of Health and Environmental Sciences' Solid Waste Program (the Department) received the "Geohydrologic Characterization for the Mister M Landfill". One of the primary purposes of such a study is to determine the depth to ground water beneath the site and the natural quality of the ground water in the area, hydraulically upgradient as well as down gradient from the site. Normally, drilling to the uppermost water-bearing unit at the perimeter of the waste management unit boundary(s) is generally the most obvious method for hydrogeologic characterization of a site. This approach may also provide locations for the installation of ground water monitoring wells as part of the final monitoring network at a site.

A brief preliminary interpretation of the local geology and hydrology supplied in the Work Plan for the Hydrogeologic and Soils Study at the Mister M Disposal facility inferred that significant quantities of ground water would not be encountered until the confined Kootenai Sandstone aquifer was penetrated (approximately 80 to 140 feet deep from supply well data, A and H). This aquifer is used as the primary drinking water source for this rural area. Based on this information, the Department was reluctant to encourage drilling through the confining layer into this drinking water aquifer. Numerous domestic wells in the area were expected to provide sufficient information to be able to extrapolate the approximate depth of the aquifer beneath and immediately adjacent to the landfill. It was the Department's understanding that the entire unsaturated zone would be drilled, establishing the top but not penetrating the confining shale layer directly above the aquifer, both in the hydraulically upgradient portion of the site, as well as down gradient from the facility.

As stated in the Geohydrologic Assessment, geologic beds dip to the southwest (section 3.2, page 17). In the boring for MW-6, which is located topographically lateral, to relatively upgradient from the disposal area, a sandstone is described at the surface which extends to 28 feet deep. This sandstone appears to represent a direct recharge zone at the ground surface. If geologic beds dip at 6 to 12 degrees to the southwest (as stated in the text), this sandstone should be present beneath the site, and should exist at depth on the down gradient side of the site (i.e., to the south-southwest). Figure 5 of the report, shows the general direction of ground water flow at the site to be to the southwest. Figure 4, shows an increasing thickness of the Kootenai Formation west-southwest. This data would highly persuade the Department to consider that the direction of leachate migration and ground water flow would be to the southwest at this site. The sandstone identified at the surface in MW-6 needs to be extrapolated down dip, beneath the site. This sandstone may act as a conduit for the recharge water topographically upgradient from the site. As it migrates southwesterly (down gradient) into, or beneath the landfill, it should be monitored for water quality (assuming saturation) at the down gradient (south) side of the facility.

Deficiency #1

Due to this confusion in hydrogeologic interpretation and correlation, it is imperative that cross sections accompany this report. It is also a requirement according to the Administrative Rules of Montana (ARM) 16.14.703(1)(a)(iv), 16.14.703(1)(a)(iv)(B), and 16.14.703(1)(a)(v)(B). These sections constructed in both north-south and east-west directions should include monitoring wells, borings, test pits (as applicable), and domestic/supply wells adjacent to the site. Sandstone and shale zones need to be correlated from lithologic descriptions found on boring logs and water well logs, as available. Water levels approximated from the domestic/supply wells need to be incorporated into the cross sections. The approximate depth of the waste at the disposal facility should be extrapolated into these sections, as well. It is important that the formations above the confining layer for the local aquifer be fully penetrated and the possibility of any water-bearing zones directly down gradient from the disposal area be investigated in the field (i.e., by drilling), if an adequate demonstration cannot be made in representative cross sectional form at this time from the field data already acquired at the site.

Deficiency #2

It was reported that slug tests were conducted in several of the wells installed in the unsaturated zone. Please provide the infiltration rates observed in the field from these tests, the calculations, and the individual hydraulic conductivity (K) values calculated from each test. Only the geometric mean (i.e., 1×10^{-6} cm/sec.) is provided in the text for these test results.

The transformed hydraulic conductivity value correlating horizontal K, with vertical K in the unsaturated zone will require additional background documentation as to the application of this value. Is Cedegren (1968), listed on page 14 of the text, the reference for the transformation ratio approach presented on page 19 of the text? Please provide the necessary documentation to review these calculations and their applicability.

Deficiency #3

The "Executive Summary" addresses the request for a no-migration petition approval. However, the "Geohydrologic Characterization" does not clearly reach this conclusion, and/or request a no-migration petition approval. If there is adequate site characterization information from the investigation conducted, a conclusive demonstration for a no-migration petition approval should be presented in the site characterization assessment.

The Department has targeted the three primary areas of deficiency in the "Geohydrologic Characterization of the Mister M Landfill" report. The Department believes that if these essential issues are clarified and further documented, clarity in interpretation of the data may be accomplished and possibly a no-migration petition might be considered.

Please Note:

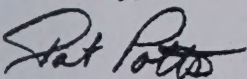
1. Department-approved monitoring well completion forms (enclosed) must be appropriately completed and included in the response to these comments, as they are required according to ARM 16.14.705(11).

2. With reference to the statements made under the 7.0 CLOSURE section of this report, any documents, reports, applications, etc. required according to ARM are public record. The Department's files must remain open for public review during normal working hours.

It is essential that Mister M Disposal address all of these comments on a timely basis, as the facility is required to monitor the quality of the ground water beneath the site [Section 75-10-207(1), Montana Code Annotated], if in fact shallow ground water bearing zones do exist hydraulically down gradient. The Department will require a response concerning the above comments within 45 calendar days from the date of this letter.

If you have any questions, please give me a call.

Sincerely,



Pat Potts
Environmental Specialist

path: sw\fergusmr.hss
file: fergusco/mister m/grdwtr (corr)

enclosure - Monitoring Well Completion Form

cc: Mr. Marvin Mintyala, Mister M Disposal, HCR 85, Box 4066, Lewistown, MT 59457
Roger Godfrey, R.S., Central Montana Health District, 404 4th Ave. South, Lewistown, MT 59457
Fergus County Commissioners, 712 W. Main, Lewistown, MT 59457
City of Lewistown, 305 Watson Street, Lewistown, MT 59457

File: FERGUS Co,
Mister M,
grd wtr (corr)

Robert W. Gillespie, P.E.
Consulting Geotechnical & Environmental Engineer

FAX FORM

P.O. Box 876
Lewistown, Montana 59457

DATE 10-12-94

PROJECT MISTER M
LANDFILL

TO: PAT POTTS

FAX NO. (406) 444-1499

FROM: ROB GILLESPIE

NO. OF PAGES INCLUDING THIS PAGE 5

MESSAGE: FOR YOUR REVIEW. WOULD APPRECIATE
CONCURRENCE/COMMENTS SO WELLS CAN BE
INSTALLED 10/14 & 15/94. WILL VISIT YOU MID TO
LATE AFTERNOON 10/13/94.

RWG

PLEASE LET US KNOW IF THIS TELECOPY IS UNSATISFACTORY
THANK YOU

Robert W. Gillespie, P.E.
Consulting Geotechnical Engineer

Registered in: Montana Wyoming North Dakota South Dakota Idaho Nevada
Maine New Hampshire Massachusetts Vermont Florida

10 October 1994

Marvin and Sandra Mintyala
Mister M Disposal, Inc.
HCR 85, Box 4066
Lewistown, MT 59457

Subject: DHES Letter of 29 September 1994
Solid Waste License No. 302

Dear Mr. and Mrs. Mintyala:

As requested we have reviewed the above referenced letter signed by Pat Potts, Environmental Specialist, and herewith provide responses, comments, and recommendations as appropriate. They are presented in the same order as the letter for ease of reference.

Water Level Measurements

Water level measurements have been made on several occasions since the June/July 1993 installation and permeability testing. While tabulated results were not presented in the Report of Site Characterization, they are contained in textual discussions. For reference they are presented as Table I, attached.

Sampling of Domestic Wells

During and prior to preparation of the work plan for site characterization, we proposed sampling the wells contained within the Mintyala property but were informed they were unsuitable for site characterization purposes. That is, the wells were not constructed as monitoring wells and were therefore not suitable for the sampling program.

The possibility of perched ground water is improbable based on surficial soil types (very clayey), permeabilities (low), and water balances. The work conducted for the characterization demonstrates that very little, if any, water is available for recharge of the local ground water system.

3

2

As indicated earlier, we had offered to sample the domestic wells under your control. Ms. Potts has now requested that wells A, G, H, C, B, and the office well be sampled and tested for parameters listed in ARM 16.14.706 Table 1 (see Fig. 6 of report for locations). She suggests that this is a one-time suite. There are several issues involved with her request. First, you should request that DHES provide you with the authority under which they can require sampling of wells not on your property or under your direct control. A review of current regulations did not reveal such authority to us.

Ms. Potts also cites ARM Title 16, Chapter 14, Subchapter 7, and Section 75-10-207 with regard to protection of public health and the environment. The basis for her determination of the need to protect health and environment should be specifically stated.

We understand that you have good rapport with the owners of wells H and G, and you control well A and that for the office. Therefore, we recommend sampling of those wells and measurement of water levels in A and the office well.

Comments on Site Characterization

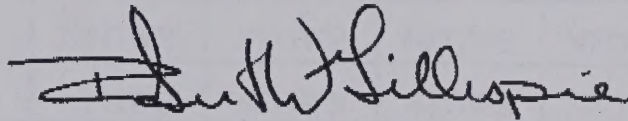
The "major discrepancies" noted by Ms. Potts are, in fact, our interpretation for the cross-sections. To have included all minor lithologic features would have produced a section which was unusable to most people. That is, the Kootenai Formation is a heterogeneous mixture of shale, siltstone, and sandstone in various petrographic combinations and lithologic sequences. Her incorporation of our data onto Cross-sections A-A' and C-C' and subsequent extrapolations neglect the fact that exposed and measured strike and dip are transcended by her interpretations. Based on her sketch, the sandstone would have a dip of more than 20 degrees. During field mapping we found no dip that varied by more than a few degrees from 15 to 16 degrees. We also observed no structure which would indicate any distortion of stratigraphy.

Ms. Potts requires that MW-1,2,3,4, and 7 be drilled to a point 40 feet deeper than original installations. MW-1,3, and 4 are inaccessible to a large drill rig capable of penetrating the shale, and MW-2 and 7 are within 20 feet of each other. In order to lay the issue to rest, we recommend that two new wells be drilled to a depth of approximately 60 feet. One well should be installed 70 feet south-southeast of the MW-2/7 cluster, and one 70 feet east of the MW-1/8 cluster. The lower 20 feet will be screened unless field conditions warrant a change in that interval. Wells can be installed on 14 and 15 October while the driller is on site to finish the methane monitoring wells.

Closure

We have endeavored to provide a middle ground for all parties involved in the permitting process. Some of the requirements listed by Ms. Potts are excessive and fraught with liability, while others are very difficult without excessive site preparation. The recommendations contained herein will, we believe, provide the data Ms. Potts seeks without extraordinary costs to you. If you have any questions or if we may be of further service, please contact us.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Robert W. Gillespie". The signature is fluid and cursive, with a long horizontal stroke at the beginning.

Robert W. Gillespie, P.E.

RWG:ci

cc: Fergus County Commissioners
Central Montana Health District
City of Lewistown
G. Steven Brown, Esq.

The first requirement is that the person must be a resident of the State of New York. The second requirement is that the person must be a citizen of the United States. The third requirement is that the person must be at least 21 years of age. The fourth requirement is that the person must be of sound mind and body. The fifth requirement is that the person must be of good moral character. The sixth requirement is that the person must be of good reputation. The seventh requirement is that the person must be of good character. The eighth requirement is that the person must be of good reputation. The ninth requirement is that the person must be of good character. The tenth requirement is that the person must be of good reputation.

[Signature]

NOTARY PUBLIC

STATE OF NEW YORK
COUNTY OF []
[]
[]
[]

TABLE I

SUMMARY OF GROUND WATER ELEVATIONS
MISTER M LANDFILL
LEWISTOWN, MONTANA

Depth to Ground						
	6/20/93	6/23/93	9/11/93	11/24/93	3/4/94	5/16/94
MW-1	NFGWE ⁽¹⁾	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE
MW-2	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE
MW-3	No Well Installed					
MW-4	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE
MW-5	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE
MW-6	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE
MW-7	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE
MW-8	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE	NFGWE

⁽¹⁾ NFGWE = No Free Groundwater Encountered

